



## About Vegspec

Vegspec is a web-based decision support system that assists land managers in the planning and design of vegetative establishment practices.

VegSpec utilizes soil, plant, and climate data to select plant species that are (1) site-specifically adapted, (2) suitable for the selected practice, and (3) appropriate for the purposes and objectives for which the planting is intended.

The VegSpec application has the ability to determine site-specific adaptability of plant species.

### VegSpec 3.0 Requirements:

**VegSpec design module requires Java enabled Netscape 4.06, or Internet Explorer 4.0, or higher.**

Go to the Netscape or Internet Explorer home sites for the latest downloadable browser versions.  
<http://www.microsoft.com/> or <http://www.microsoft.com/>

## Starting VegSpec

Open the Plants home page in an internet browser at

<http://plants.usda.gov/>

Click on the VegSpec icon to go to the home page.



Click on icon to go to the VegSpec home page and application.

## VegSpec Quick Guide

You can start the Vegspec application from the home page, as well as select other related topics.

Creating Vegetative Designs  
**VegSpec**

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Vegspec design module requires Java enabled Netscape 4.06, or Internet Explorer 4.0, or higher.

Please address all comments and suggestions about the contents of this Web page to [psmith@itc.nrcs.usda.gov](mailto:psmith@itc.nrcs.usda.gov) or [dzhu@itc.nrcs.usda.gov](mailto:dzhu@itc.nrcs.usda.gov)

If you are having problems with this Web page, please let us know at [fyork@itc.nrcs.usda.gov](mailto:fyork@itc.nrcs.usda.gov)

**Sponsor Related Links:**

Forest & Rangeland Ecosystem Science Center  
US ARMY Corps of Engineers  
Biological Resources Division  
United States Department of Agriculture

Click on the Vegspec image or click **Starting Vegspec** on the top menu bar to start the application.

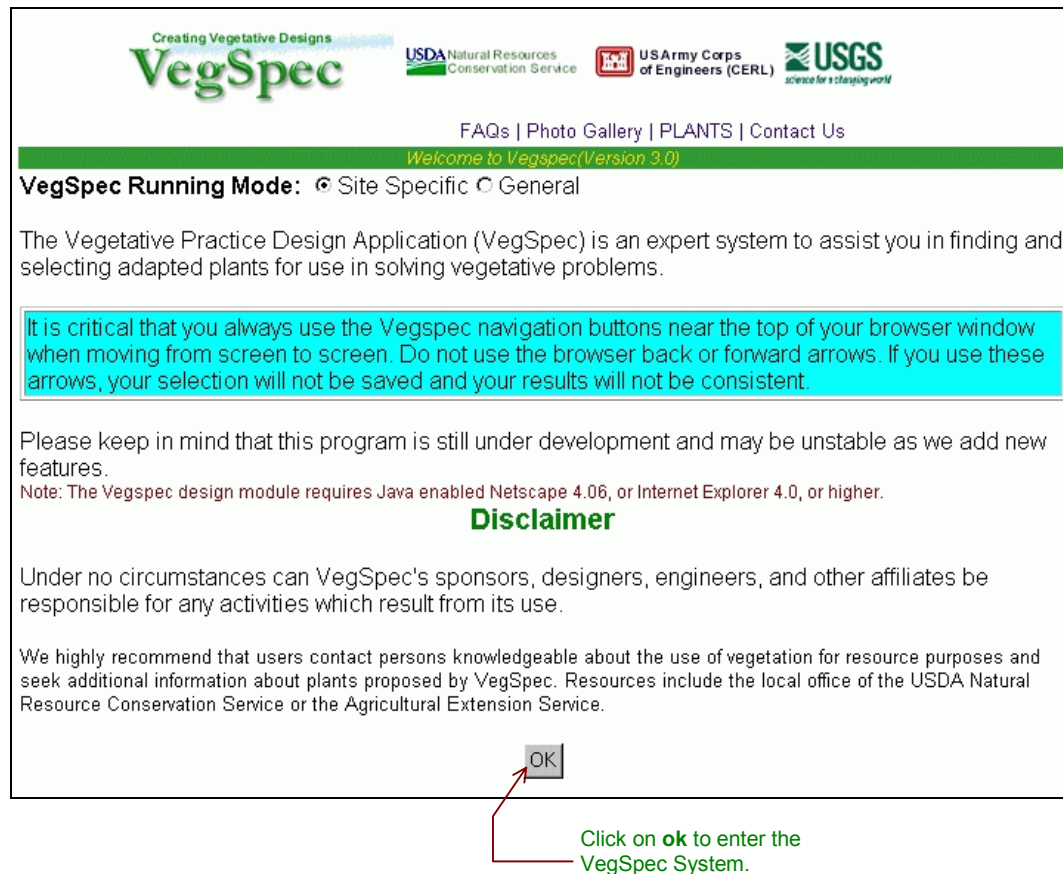
The following subtopic links are located above the top menu bar:

- ♦ *FAQs* – frequently asked questions
- ♦ *Photo Gallery* – online photo gallery
- ♦ *PLANTS* – Plants database
- ♦ *Contact Us* – displays an e-mail window for your comments
- ♦ *Help* – online help system – TOC and contact-sensitive

The following links are located on the top menu bar:

- ♦ *About Vegspec* – Describes the Vegspec system
- ♦ *Starting Vegspec* – starts the VegSpec application
- ♦ *Related Sites* – links to other plant-based websites
- ♦ *Vegspec Team* – links to sponsors and developers

After starting Vegspec, the following Disclaimer screen is displayed. Click on the site-specific or general option and read the disclaimer text. Click on **ok** to begin.



### Site Specific vs. General approach:

Vegspec now has a general or a site-specific option to choose before starting your practice designs.

Select the **Site Specific** option to narrow down plant choices by state, mlra, soil, and climate options. This is the recommended method as the vegetative list is more user-specific and regionally accurate.

Users may select the **General** option for a generalized plant list. You **must** select a Plant Adaptation Zone under the Soil Attributes Suboption to even get close to an appropriate list of plants. **Note:** The Planting Design section is not available in this option.

**Do not use the browser back and forward buttons to navigate, as screen choices might be lost.**

## Site Description

Site Description is the first section of the VegSpec application. If you have selected the recommended site-specific approach, you must enter your state, soils, and climate information before continuing to another section. If this section is not fully completed, warnings are displayed.

If you have selected the general approach, this section does not have to be filled out completely before selecting a different section. The Planting Design section is not available, and your plants list can be longer.

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Site Description | Objectives | Select Plants | Planting Design | Report | Help

**Site Description** [Reset] [Start Over]

Complete the sections below to describe your site. After completing the site description click Objectives.

**Identification(Optional):**  
 The site name, project location and user name are optional fields. They will appear on report.

Site Name: [Fort Collins Area]  
 User Name: [Jill Burgchardt] Project Location: [Fort Collins]

State: [Colorado]

**Soils:**  
 Complete items 1, 2, and 3 below (in sequence) to describe soils for your location. Related information will be included from the database. You may view or enter selected soil attributes in the [soil attributes suboption](#).

1. Soil Survey Area Id: [LARIMER COUNTY AREA, COLORADO: 644]  
 2. Soil Map Unit: [Fort Collins loam, 0 to 1 percent slopes: 34]  
 3. Soil Component: [Fort Collins:85%]  
 SOIL SUMMARY: Soil Texture class:M\* pH(low): 6.6\* pH(high): 7.8

**Climate:**  
 Use choice lists to locate the specific climate station. Related information will be included from the database. You may view or enter selected climate attributes in the [climate attributes suboption](#).

Climate Station: [CO3005:FORT COLLINS]  
 Annual Precip: 15.14" Minimum Temperature: -21.0

**Landscape:**  
 Select general landscape characteristics from the displayed lists.

Generally, what aspect does the site face?  
☒ N/A ☐ North ☐ Northeast ☐ Northwest  
☐ South ☐ Southeast ☐ Southwest ☐ West  
☐ East

Does the site receive additional water ?  
☒ No ☐ Yes

Is the site irrigated?  
☒ None ☐ For Establishment ☐ Permanent

How much exposure does the site have?  
☒ Full Sun ☐ Partial ☐ Full Shade

**Annotations:**

1. Enter the state where your site is located.
2. Enter the Soil Survey Area Id.
3. Enter the Soil Map Unit to populate your mlra and soil suboptions data.
4. Select a climate station from the drop-down field.
5. Select optional landscape characteristics.

## Objectives

The Objectives section allows you to select applicable vegetative practice and purposes for your site. It is important to select a vegetative practice, as this helps narrow your plants list considerably.

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Site Description | **Objectives** | Select Plants | Planting Design | Report | Help

**Objectives** [Reset] [Start Over]

**Complete the sections below to define your design objectives.**

**Practice:**  
Select a vegetative practice from the displayed list. After selection, related purposes will display.

☐ Cover and Green Manure Crop    ☒ Critical Area Planting  
☐ Filter Strip    ☐ Landscaping  
☐ Pasture and Hayland Planting    ☐ Range Planting  
☐ Tree/Shrub Establishment    ☐ Windbreak/Shelterbelt Establishment

**Purpose:**  
Check one or more purposes if desired. Click the Accept Purpose(s) button after highlighting desired selections. **Please note: If no practice is selected above then no purposes are available.**

☐ Fertility Enhancement    ☐ Filtration of Pollutants  
☐ Livestock Forage, Grazing    ☐ Livestock Forage, Hay/Silage  
☐ Livestock Forage, Browsing    ☐ Native Plant Community Restora  
☐ Slope Stability-CAP    ☐ Trafficability  
☐ Water Erosion Control    ☐ Wildlife Upland Habitat  
☐ Wind Erosion Control

[Accept Purpose(s)]

**Sub-Purpose:** (Please note: If no purpose(s) are selected then no sub-purposes are available.)

*Optional Plant Characteristics*

**Plant type:**  
☒ Forbs ☒ Grass ☐ Shrub ☐ Tree ☐ Vine

**Commercial Availability:**  
☒ All Plants, Regardless of Availability  
☐ Only Plants Routinely Available

**Plant Origin:**  
☒ Both ☐ Introduced ☐ Native to U.S.

Select one of the eight vegetative practices or objectives. This defines your site requirements and targets plants that are applicable.

After selecting a practice, a list of purposes is displayed. Optionally, select one or more purposes and click on **Accept Purpose**, to display a list of subpurposes. You may select other options such as plant characteristics. Additional selections refine your plants list for your site specific objectives.

## Select Plants

The Select Plants section is where you select applicable plants from a Potential Plants list. The plants listed are based on the vegetative choices you have designated.

**Select Plants**

Click button to indicate the plant name format you wish to see. You may look up specific **Attribute** of potential plants, if necessary.

Common Name Scientific Name All Name

Name Convention: Common Name

Highlight items and click arrows to move items between potential and selected plants lists.

**Potential Plants:**

- alderleaf buckthorn:n.a.:RHAL
- alfalfa:n.a.:MESA
- alkali sacaton:Salado:SPA1
- American bulrush:n.a.:SCPUP5
- American licorice:n.a.:GLLE3
- antelope bitterbrush:n.a.:PUTR2
- basin wildrye:n.a.:LECI4
- beardless wildrye:Rio:LETR5
- beardless wildrye:Shoshone:LETR5
- beardstongue:Ruby:PEHA18
- black grama:n.a.:BOER4
- blue grama:WW-65:BOGR2
- bluebunch wheatgrass:n.a.:PSSPS
- bluejoint:n.a.:CACA4
- bottlebrush squirreltail:n.a.:ELEL5

**User Selected Plants:**

- switchgrass:n.a.:PAV12
- yellow Indiangrass:n.a.:SONU2

Number Of Plants: 122

Select **one** user selected plant to view its profile from the Plant Project [View Plant Profile](#)

Click on applicable plants for your site. Ctrl+click for multiple plants.

Click on arrows to select plants and move them between Potential Plants and User Selected Plants.

## Plant Attributes

**Plant Attribute**

Name Convention: Common Name

**Plant List:**

- antelope bitterbrush:n.a.:PUTR2
- beardless wildrye:Shoshone:LETR5
- black grama:n.a.:BOER4
- blue grama:WW-65:BOGR2
- buffalograss:609:BUDA
- buffalograss:Bison:BUDA
- buffalograss:Cody:BUDA
- buffalograss:Texoka:BUDA
- crested wheatgrass:Abuzzes:AGCR
- crested wheatgrass:Ephraim:AGCR
- crested wheatgrass:Ruff:AGCR
- crested wheatgrass:SD Common:AGCR
- desert wheatgrass:Douglas:AGDE2
- desert wheatgrass:Hycrest:AGDE2

**Plant Attribute:**

- Allelopathic
- Anaerobic Tolerance
- Berries, Nuts, Seeds
- Bloat Potential
- Bloom Period
- Calcium Carbonate Toler.
- Carbon/Nitrogen Ratio
- Cold Stratification
- Coppice Potential
- Drought Tolerance
- Endangered Status Federal
- Evapotranspiration Actual Min.
- Fall Conspicuous
- Fertility Requirement

Also view additional plants with:

Plant Cultivar Name:  Plant Symbol:

Plant Cultivar Name:  Plant Symbol:

Plant Cultivar Name:  Plant Symbol:

[View 1](#) [View 2](#) [Attribute](#)

Note: View 1(Attribute on top), View 2(Plant on top), Attribute(Frequently used plant attributes).

Click **Attributes** on the Select Plants page to screen potential plants for selected attributes. The Attributes button on several other screens presents attributes for selected plants only.



## Planting Design

The Planting Design is available for vegetative calculation and plant design specifications if you have selected the site-specific approach. **This section is only available if you have selected the site-specific approach.**

The load time for this Java program can take 1-5 minutes, depending on internet traffic and connection speed.

**There are eight tabular vegetative choices:**

- ♦ *Plant Material*
- ♦ *Seeding Calculation*
- ♦ *Pure Planting*
- ♦ *Mixed Planting*
- ♦ *Sod/Sprig Planting*
- ♦ *Windbreak*
- ♦ *Site Specification*
- ♦ *Planting Specification*

### Plant Material

Depending on your vegetative choices, you will have applicable plant material options such as container, bareroot, or seed.

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Site Description Objectives Select Plants **Planting Design** Report Help

**Planting Design** Start Over

**Practice: 342-Critical Area Planting**

Plant Material	Seeding Calculation	Pure Planting	Mixed Planting	Sod/Sprig Planting	Windbreak	Site Specification	Planting Specification
Variety	Species	Planting Material	Include in Design				
n.a.	switchgrass Panicum virgatum	seed	<input checked="" type="checkbox"/>				
n.a.	yellow Indiangrass Sorghastrum nutans	seed	<input checked="" type="checkbox"/>				

Select a plant material for each plant species from the drop-down fields.

## Seeding Calculation

Determine your total needs for how many seeds per acre your vegetative site will need. You can mix percentages for different compatible plants, but the mix % should total 100% for accurate calculations.

The example below is using Drill as the Seeding Method.

1. Enter the number of Acres to Seed and tab.

2. Choose either Drill or Broadcast. If Drill, enter spacing in inches.

3. Enter the Mix % and tab. The remaining fields are populated.

Evaluate planting design

Species	Cultivar	Standard Seeding Rate(lb/acre)	Standard Seeds/ft2	Mix %	Actual Seeding Rate(lb/acre)	Actual Seeds/ft2	Total needs
switchgrass	n.a.	4.47	40.0	50	2.23	20.0	11.17
yellow Indiangrass	n.a.	10.24	40.0	50	5.12	20.0	25.59

Total Mix %: 100 Total Seeds/ft2: 40.0 Total lbs Req.: 36.76 Seeds per linear foot: 40.0

Evaluate Attribute

Click the Evaluate button available on several planting screens to view planting concerns.

Evaluation Results

	Show in Report	Click for the Details
The seeding mixture contains grasses and/or forbs that have different active growth periods. The mixture may not be compatible or may require specialized management.	<input checked="" type="checkbox"/>	Show Attributes
The seeding mixture contains species that have high fertility requirements. These species will require periodic fertilization for long-term sustainability.	<input checked="" type="checkbox"/>	Show Attributes

Submit

View attributes for listed plants only.



## Planting Calculation

Depending on whether you are performing Mixed or Pure Planting, you can determine the rate/acre total number of plants needed between and/or within the rows.

(Note: Example below shows steps for mixed planting with different row spacing.)

1. Enter the total acres to plant and tab.

2. Enter the Between Row Spacing.

3. Enter the User entered Rate/Acre

Plant Material	Seeding Calculation	Pure Planting	Mixed Planting	Sod/Sprig Planting	Windbreak	Site Specification	Planting Specification	
Total Acres to Plant		Between Row Spacing						
5		12						
Species	Cultivar	Planting Material	Mixture %	Mix Rate Min	Mix Rate Max	User entered Rate/Acre	W/In Row(ft)	Planting Total
Rocky Mountain juniper	n.a.	bareroot	70	420	588	500		2500
Siberian peashrub	n.a.	bareroot	30	410	573	450		2250
Total Mix %:		100	Total Per/Acre:	950	Planting Total:	4750	W/In Row:	3.82
Evaluate		Attribute						

## Windbreak

Determine the total plants needed for your user-specified windbreak design.

1. Enter windbreak length and tab.

2. Select plant from drop-down field.

3. Enter Plant Plan and a total is calculated for you.

4. Select Add Row to add another plant.

Plant Material	Seeding Calculation	Pure Planting	Mixed Planting	Sod/Sprig Planting	Windbreak	Site Specification	Planting Specification	
Windbreak								
Windbreak length(feet)		150						
Add row		Delete row						
Row No	Plant	Typical Row Position	Design Height(ft)	W/In Row Min(ft)	W/In Row Max(ft)	W/In Row Planned(ft)	Btw Row Planned	Total Plants
1	eastern redcedar(n.a.)	Any	18	6	10	8	16	19
2	Rocky Mountain juniper(n.a.)	Any	18	6	10	8	16	19
3	Rocky Mountain juniper(n.a.)	Any	18	6	10	8	16	19
Evaluate		Attribute						

## Sprig

Sod/Sprig Planting allows you to designate the preferred units and units per acre. Application calculates Total Units after you enter Acres to Plant, Units, and Units/Acre.

1. Enter acres to plant.      2. Select unit of measure.      3. Enter units per acre.

Species	Cultivar	Planting Material	Acres to Plant	Units	Units/Acre	Total Units
buffalograss	Bison	sprig	5	Bushel		

Evaluate      Attribute

## Site Specification

Site Specification is where you can designate seedbed preparation methods and temporary cover.

Check all seed bed methods that apply.

Seedbed preparation Method(s)	Date	Name	Rate/ac
Mechanical Kill: <input checked="" type="checkbox"/>	5/01/2000		
Physical burning: <input type="checkbox"/>			
Chemical burning or killing: <input type="checkbox"/>			

Using Temporary Cover

If temporary cover is to be planted in advance of your planting, or temporary cover exists on the site, or is to be added at the time of planting, complete the appropriate parts of this screen.

Plant annual cover: ☒ Name:  Eliminate by:  Mechanical Kill

or  common wheat(n.a.)

Plant into existing cover: ☐



## Planting Specification

Planting Specification allows you to determine any special planting material treatments.

Plant Material	Seeding Calculation	Pure Planting	Mixed Planting	Sod/Sprig Planting	Windbreak	Site Specification	Planting Specification
Planting Specifications							
Species	Cultivar	Plant material	Amount	Unit	Optimum Germination/ Emergence Period	Additional Planting Specification	
switchgrass	n.a.	seed	11.17	pls lb.	4/15-6/1	...	
yellow Indiangrass	n.a.	seed	25.59	pls lb.	4/15-6/1	...	

Click on Additional Planting Specification and a dialog box appears where you can designate different planting treatments.

**Additional Planting Specification**

Special planting material treatment:

Inoculation  
 Seed Coating  
 N/A

Planting Method: Drill

Planting Date(3 choices):

6/28	7/18
7/18	8/1

Save
Cancel

Warning: Applet Window

## Reports

VegSpec reports are a product of your vegetative practice options and are customized by you. Your report displays your vegetative options with data tables, site specification tips, and planting calculations.